TABLE 10

P. 25, *Les Sources de VEnergie Calorifique,*

The formulas for the law for the heat capacity of gases at constant pressure have been given by Mallard and Le Chatelier in terms of the absolute temperature, and the total heat capacity from 0 absolute (— 273°) to a temperature $T = 273+t$ can be expressed by a parabolic formula of two terms:

$$\text{lOO}(T \quad 1000^{2'}$$

in which a is a constant common to all gases, equal to 6.5 and b is a constant variable with the different gases, the value of which is

For nitrogen, hydrogen, oxygen and carbon monoxide = 0.6;
For water vapor = 2. 9;
For carbon dioxide = 3. 7;
For methane = 6.0.

From this, the molecular heat capacity for a gram molecule or 22.32 liters of a gas between two temperatures $to = T_Q$— 273 and $t = T$ — 273 may be expressed by the formula:

$$\mathbf{n}_{=} \quad {}^{T\sim TQ} \quad J^{*}\text{-}T_Q^{*}$$
$$\text{^ } {}^{a} 1000 \; {}^{+} \quad \text{i}000^{2} \bullet$$

By taking the values derived from this formula the specific heat for a particular temperature may be obtained by the formula:

$$dT \qquad \text{^LfV} = \quad {}^{a} \quad \text{I} \quad {}^{26} 1000^{T} \text{""""lOOO}^{2}$$